



SciShops

ENHANCING THE RESPONSIBLE AND SUSTAINABLE EXPANSION OF THE SCIENCE SHOPS ECOSYSTEM IN EUROPE

D6.4

Staff Training Evaluation



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Executive summary

The establishment of at least 10 new sustainable Science Shops in Europe is the main aim of the SciShops.eu project. This report records the mutual exchange learning events that have been carried out or will be carried out as part of T6.4 and the resulting outcomes and how the new Science Shops are benefiting from these events in their mission to successfully carry out community-based participatory research. Tools, methodologies and best practices for achieving sustainable new Science Shops are being delivered to the Science Shops through a series of five virtual Science Shop visits (webinars) to established Science Shops that have been successfully carrying out science for and with community. A series of physical visits is also being undertaken and these are also documented in this report.

To this end, the report outlines the actions taken for organising these visits and the adaptation and changes the staff of the new Science Shops needs to take into account in order to successfully carry out community-based participatory research, tackle the pressing societal challenges Europe and the world are facing today, promote knowledge exchange and enhance partner collaborations in achieving a European network for science shops.

Deliverable 6.4 is officially called “Staff Training Evaluation”. However, given the format of the training - virtual and physical visits to Science Shops and similar structures – a secondary title has been added: *“Virtual and physical visits to Science Shops and other science with and for society initiatives”*.

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Virtual and physical visits to Science Shops and other science with and for society initiatives

1. Introduction

Based on the feedback that the new Science Shop staff received in previous tasks, at the consortium meeting in Madrid in February 2019, mutual learning exchange events for further training the new Science Shop staff was discussed with all partners. It was decided that the most effective way of achieving this would be a series of five virtual visits to established Science Shops, which would be delivered in the form of webinars. These virtual visits are complimented by a series of physical visits to Science Shops and to other initiatives and organisations successfully running science with and for society projects. The number of physical visits can be limited due to cost and logistics challenges in contrast to virtual visits which can engage easily all partners from their location at very low cost. Therefore, they have been organised mostly in conjunction to the two SciShops.eu Summer Schools where all partners participate. The visits have already offered many opportunities to all partners to learn good practices, strategies and tips from well-established Science Shops, other science-society initiatives and from each other.

In this report, we thus describe and evaluate the series of virtual and physical visits to successful Science Shops and other science with and for society initiatives. We describe the mutual learning events, organised as part of T6.4, to promote knowledge exchange and training for undertaking community-based participatory research. Moreover, the report describes the benefits and lessons learned from the visits and summarises adaptations and changes that the new Science Shop staff need to take into account when dealing with community-based participatory research.

Future visits (after the submission of this deliverable) and similar training events will be reported in Deliverable 3.8 and in the Final Report.

2 Science Shop virtual visits (webinars)

2.1. Organising the virtual visits

To organise the Science Shop virtual visits many discussions and investigations were undertaken between Ms Helen Garrison (Vetenskap & Allmänhet), Dr Michaela Livingstone-Banks (University of Oxford Science Shop), and Ms Carmen Munteanu (SYNYO), in order to organise them in the most effective and impactful way. A list of potential speakers was created and invitation letters were sent to them. The aim was to engage experienced Science Shop staff from different types of Science Shops¹ and enable them to share their expertise by interacting with the SciShops.eu consortium members. University-based and NGO/NPOs-based Science Shops were approached, as well as other science with and for society initiatives that are acting as Science Shops.

In the second stage, after the invited people replied, three potential time slots were suggested to them, to the staff of the Science Shops and to the other 6 partner organisations in the SciShops consortium, using Doodle polls. It was decided that the participation of the 10 new Science Shops to the virtual visits should be mandatory and all other partners should also be strongly encouraged to participate. After the announcement of the day and time of the webinars, sessions were organised using the Zoom platform which was deemed to be the most reliable and economic platform for the purpose.

The webinars were planned to last one hour. The virtual visit speaker/host was invited to deliver a short presentation, either just by talking or using PowerPoint slides, followed by a question and answer session. (The presentation files and a video of the session are also made available to the consortium members after the visit in order to revisit points they would like to hear again or for consortium members that were not able to participate.) SciCo Cyprus organised and coordinated the sessions, introducing the host and moderating the question and answer session. The aim of the webinars is to create an open and relaxed atmosphere for learning exchanges. In this way, the new Science Shops can quickly benefit by getting an overview of a successful Science Shop, e.g.

- How it was set up
- The challenges it faced
- Regional aspects and how they work
- Optimising dissemination
- How sustainability was achieved
- Best strategies for participatory research

The series of webinars was planned for the months May, June, September, October and November 2019, as during July and August most of partners will be on holidays and the required participatory by the Science Shops cannot be achieved. So far two webinars took place successfully and one has been scheduled for October. It was decided that the remaining two virtual visits will be to Science Shops not based in universities and a search is currently being undertaken to engage speakers/hosts, leveraging the extensive networks of the SciShops consortium.

¹ Since the first Science Shop based at a Large Enterprise (LE) is the KPMG Science Shop in Cyprus, there is not any LE-based Science Shop outside the SciShops consortium.

2.2. 1st Webinar

The 1st webinar took place on May 24, 2019. The speaker/host was Ms Jozefien De Marrée from the Brussels Science Shop, who has multi-year experience in coordinating the Brussels Science Shop. Since 2010 Ms Jozefien De Marrée is building bridges between science and society as a staff member of the VUB Science Outreach Office, which is in the VUB Research department. She is coordinating two European projects on community-based research, EnRRICH (Horizon2020 project, 2015-2018) & ENtRANCE (Erasmus+ project, 2018-2020).

In the webinar 22 active participants joined, with staff from all Science Shops. The host delivered a 20-minute presentation and shared useful links and files [1] (see References for files and Appendix for the presentation file). Subsequently, the participants introduced themselves, and a fruitful discussion ensued with the host.

The webinar lasted a bit more than an hour in the end as many participants and the host were eager to continue. Feedback from some participants to reduce the duration by asking the people who have questions to use the “Raise a hand” facility and then introduce themselves was implemented in the 2nd webinar. Overall, the virtual visit went well and was considered very useful by the new Science Shops, as they felt it has given them not only the opportunity to learn from a successful Science Shop, but also to extend their network. In addition, the webinar was recorded and shared with other partners and that were not able to attend. It has also been saved for future reference. Some pictures (screenshots) from the webinar are found below.

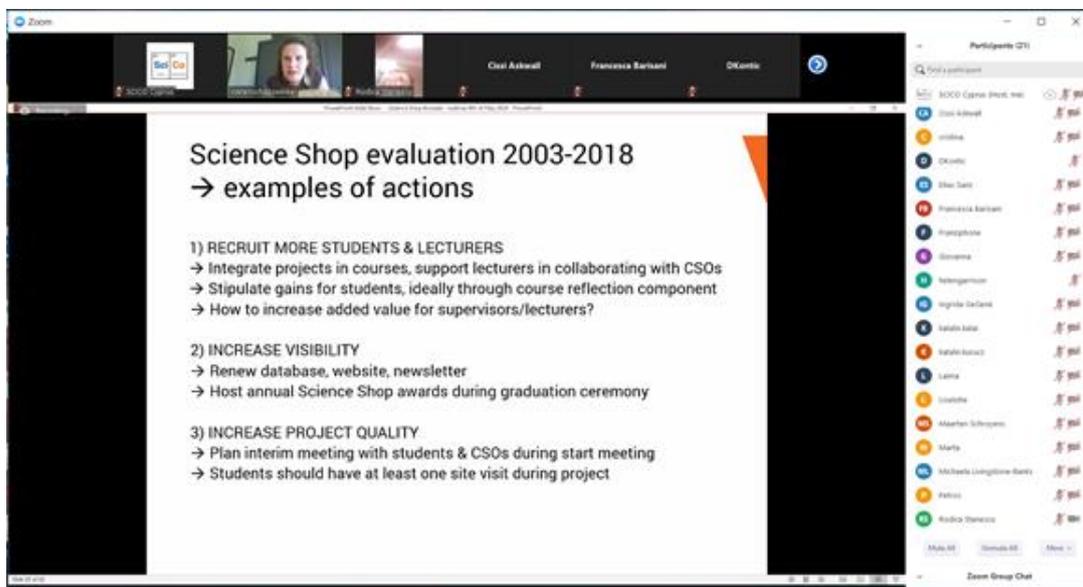


Figure 1. A Slide from Ms De Marrée’s presentation with examples of actions for performing a Science Shop evaluation (Picture of the presentation is used with permission from Ms De Marrée).

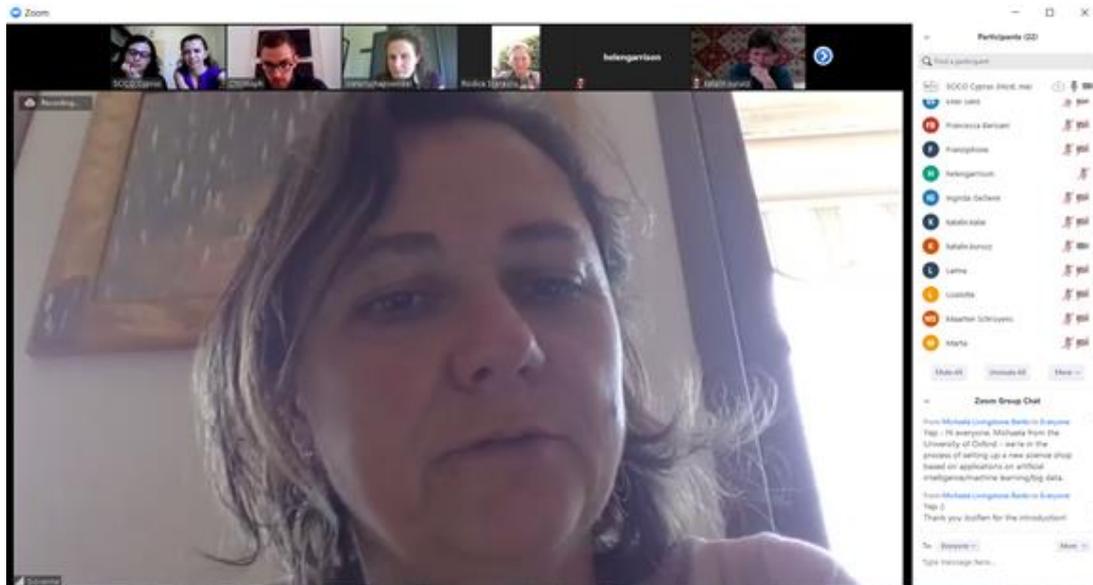


Figure 2. Prof Giovanna Grossi, Brescia Science Shop (Picture used with permission from Prof Grossi)

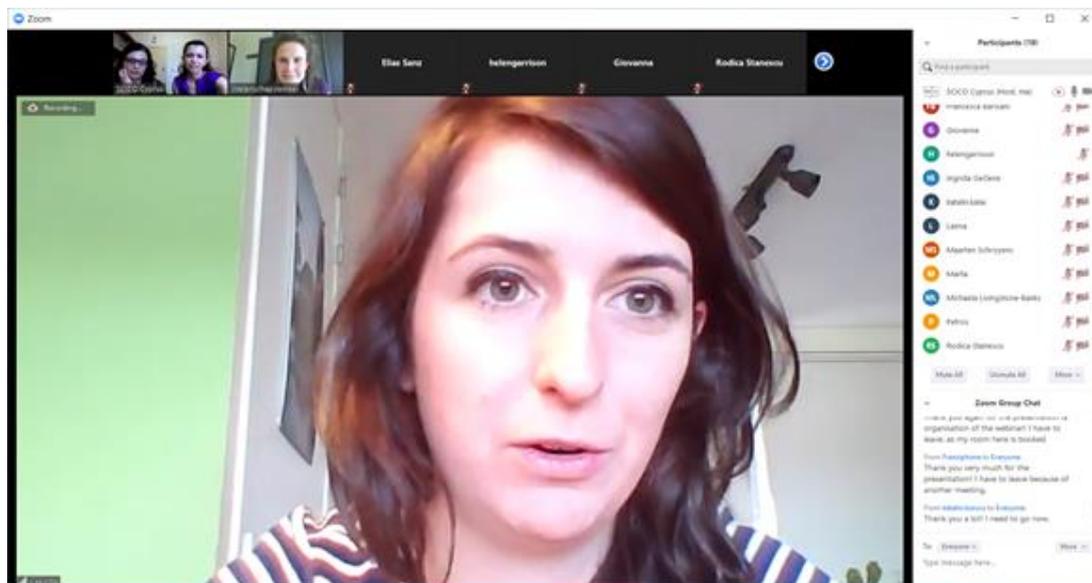


Figure 3. Ms Liselotte Rambonnet, Universiteit Leiden (Picture used with permission from Ms Rambonnet)

Benefits/lessons from the webinar

Through this webinar partners had the chance to learn more about the Brussels Science Shop, how they work and the regional networking with other local (Flemish) Science Shops, as well as several topics and challenges that a Science Shop needs to handle in order to achieve a successful and sustainable route.

Regarding **identifying and collecting research questions from CSOs and channelling them to the appropriate researchers**, which is usually a challenging procedure for Science Shops, the key steps followed at the Brussels Science Shops are as follows:

- Frequently participate in events where CSOs are active
- CSOs register and submit research questions to a database

- Science Shops and CSOs discuss the questions to clarify the type of research skills required by researchers (e.g., knowledge of other/foreign languages , data analysis skills etc.), so that that the questions can be translated into different projects
- Projects are sent to an advisory council and if approved they become available in the database
- Students can choose projects from the database, get in touch with the CSO and search for a supervisor
- Science Shop hosts an initial meeting with the student, supervisor and the CSO to launch the research project
- Note: when a project is undertaken by a university it is then deleted from all other regional databases

The main goal of this procedure is to undertake collaborative research with the CSOs and enable them to solve pressing societal challenges. The Brussels Science Shop is currently receiving at least five new research topics monthly as a result of mouth to mouth promotion between CSOs.

Some **criteria for choosing the research questions** have been established by the Brussels Science Shop and these can be relevant to all Science Shops. The questions have to be (i) researchable; (ii) relevant and useful to several CSOs and to a large enough part of the society (iii) non-profit and non-commercial and (iv) 'timeless', i.e. questions that can be answered possibly within years and can be the subject of scientific works and dissertations but at the same time CSOs should be able to use the results in a reasonable timeframe.

Regarding the **engagement and training of university lecturers** and **evaluating the impact of the projects** , the [ENtRANCE project](#), a successful and active project in which the Brussels Science Shop acts as the coordinator has developed training material for lecturers with future plans on key studies and other material that could be useful to the SciShops partners. Through the ENtRANCE project the Brussel Science Shop has also undertaken a successful impact evaluation for the past ten years, by:

- Interviews and surveys completed by CSOs involved in successful projects – how they used the results, how they evaluated the way that Science Shops work, and feedback on the collaboration they had with the students, the supervisors and the Science Shop
- Surveys completed by students
- Surveys completed by supervisors

Based on the results of the evaluation Science Shops should take action and:

- Engage more students and lecturers to run Science Shop projects
- Increase visibility (e.g., renew databases, update website, write a newsletter, host Science Shop awards during the university's graduation ceremony etc.)
- Enhance project quality (e.g. plan interim meeting with students and CSOs after the initial meeting, increase site visits by students during the project etc)

A way of **engaging more students and lecturers** in Science Shop projects is to frequently communicate and discuss with university lecturers and ensure that Science Shop topics can be formulated as undergraduate and Masters' thesis topics and as part of other projects run within university courses.

The key steps for **effective promotion and dissemination** of a Science Shop's activities that the host suggested are:

- Frequently participate in events with many CSOs
- Disseminate the projects to other universities
- Be in frequent contact with other regional Science Shops and use joint promotion to the civil society as well as sharing and discussing research questions
- Write press releases and participate in newsletters of umbrella organisations
- Write journal publications (in the case of follow-up studies)
- Organise events and exhibitions

In addition, **regional aspects**, types of collaboration and **sustainability of networking** were discussed with the host and the partners. In addition to this collaboration with regional Science Shops can lead to new research questions and exchange ideas on local issues and challenges. Moreover, collaboration with non-local Science Shops was advised as they can be beneficial for exchanging ideas and having an informal network, despite the difficulties that can be faced (e.g. different language, different problems etc). Finally, a sustainable Science Shop needs to have at least one dedicated staff member, as well as actively maintain close connections with the CSOs so that research questions are being provided on a frequent basis.

2.3. 2nd Webinar

The 2nd webinar took place on June 5, 2019 and the speaker/host was Dr Michael Søgaard Jørgensen from Aalborg University, Denmark. Dr Michael Søgaard Jørgensen is an Associate Professor at Aalborg University. He has teaching experience on sustainable design, product/service systems, sustainable transition and life cycle management. His current research focuses on social innovation, sustainable transition and on sustainability strategies in businesses and cities, including circular economy. He was one of the founders and the coordinator of the Science Shop at Technical University of Denmark 1985-2010 and one of the founding members in 2001 of the international network of Science Shops, [Living Knowledge](#). Michael has participated in several EU projects about societal impacts of Science Shops: SCIPAS, INTERACTS, TRAMS, ISSNET and PERARES. Today he is working in the Unit for sustainable design and transition at Aalborg University. The Unit does not have a formalised Science Shop but it is functioning like a Science Shop in relation to both its research, which often applies participatory methods, and its teaching which employs problem-based learning (PBL) as a very important concept.

The virtual visit included 16 active participants and was a very insightful session from a university-based Science Shop. The speaker delivered a presentation and shared useful files [2] (see References for files and Appendix for the presentation file). After this, there was a question and answer session. The overall duration of the webinar was one hour and was recorded. This webinar was also successful and useful for the new Science Shops, especially for the new university-based Science Shops. Below a series of screenshots can be found.

Empowerment of CSOs: Enhancing their capacity for influencing society

- CSOs provided with knowledgeand are (maybe) able to implement results in their activities or services
- CSOs bring forward the scientific research and its results in order to raise interest and support around a topic.
 - Although a scientific report might not be enough to convince other stakeholders

Figure 4. From Dr Jørgensen's presentation on empowerment of CSOs (Picture used with permission from Dr Jørgensen)

Impact: Students help local community council visualise their ideas about new public facilities as part of urban renewal on empty spaces. Led to new culture house. The Copenhagen city administration started taking the local council serious. => part of city experiment with local planning

Lokalplanlægning fra DTU giver øget borgerindflydelse
 Studerende har lavet byplanlægning i Vindens 16 gade for borgerne

Figure 5. From Dr Jørgensen's presentation on impact (Picture used with permission from Dr Jørgensen)

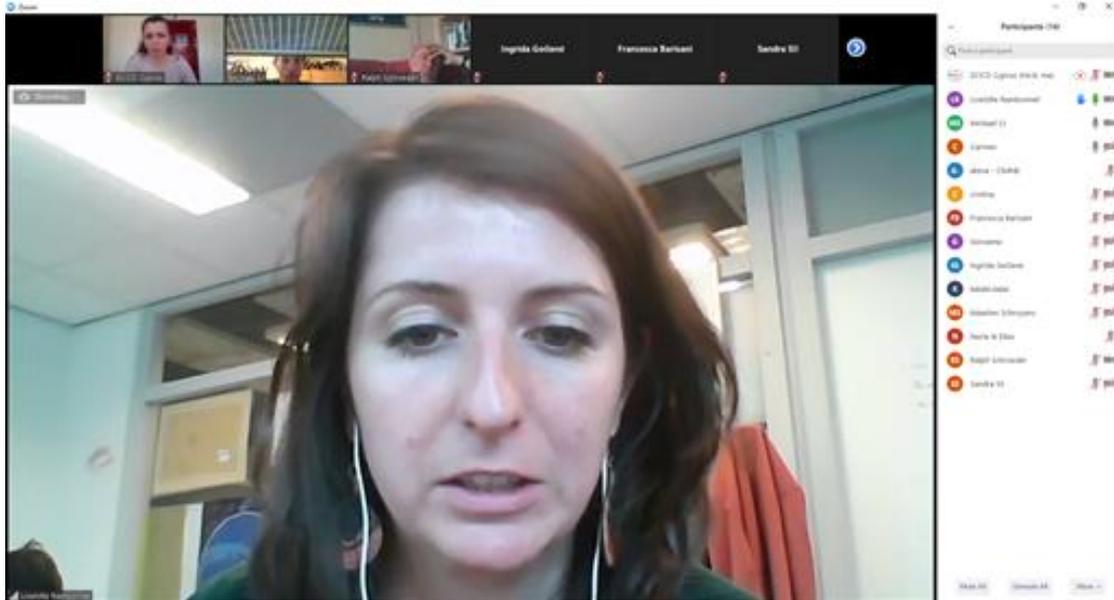


Figure 6. Ms Liselotte Rambonnet, Universiteit Leiden (Picture used with permission from Ms Rambonnet)

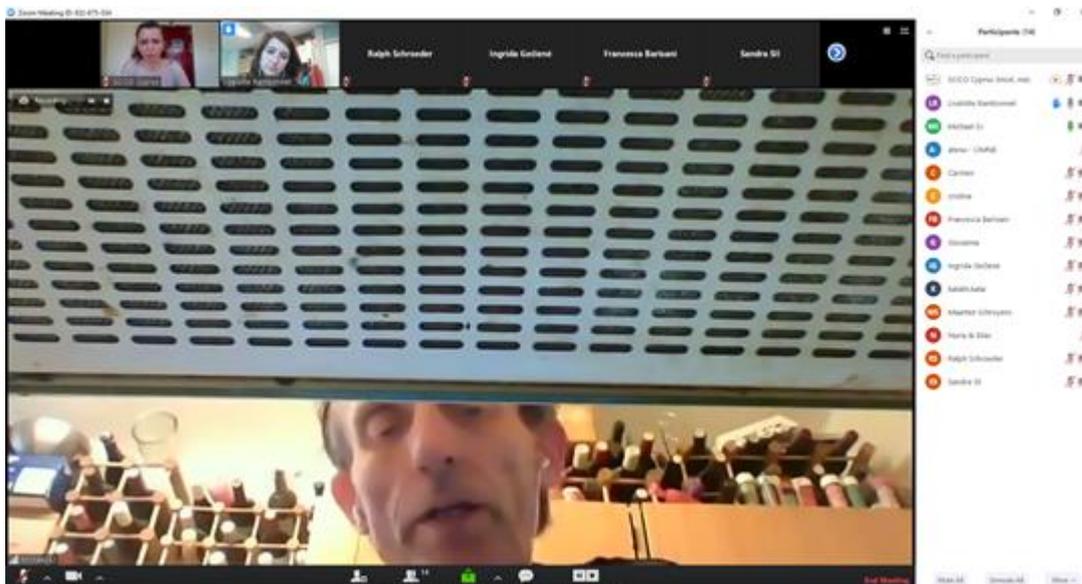


Figure 7. Dr Michael Sogaard Jørgensen (Picture used with permission from Dr Jørgensen)

Benefits/lessons from the webinar

The host delivered a very interesting talk on empowerment of civil society through Science Shops. Then models for analysis of Science Shop projects with CSOs were described with emphasis on the results, outcomes and **evaluation of the impact of Science Shop projects**. A systematic way of defining the way that the results can be used (e.g., if they can be published) and evaluating the impact of the project one year after its end was suggested to the partners.

Empowerment of CSOs by enhancing their capacity to influence society was also discussed, as CSOs can provide knowledge and implement results in their activities or services. These results can be

brought forward to scientific research and raise stakeholders' interest, and a Science Shop can help with translating these results.

One more interesting strategy mentioned was running Science Shop projects as part of every university semester the number of projects increases and **students become engaged** with high-impact projects as part of their curriculum. Two examples of successful student projects at Technical University of Denmark (DTU) Dr Dr Jørgensen relayed are: (i) development of a computer game that was made available at the DTU website, (ii) helping local community council to visualise their ideas about new public facilities as part of urban renewal on empty spaces local planning of urban renewal on empty spaces. Aalborg university gets in touch with civil society suggesting the projects and offering collaboration to the local society in topics that are already known to be of interest to the communities. This is a proactive approach that could be used by other university-based Science Shops.

Main **challenges** that a Science Shop could face were discussed during the session, such as the lack of experience of teachers or researchers in participatory research. Dr Jørgensen recommended that in this case the university-based Science Shop can act as a supervisor and share methods in working in a participatory way, thus providing the necessary information and knowledge to proceed with the research. This is an important role that a Science Shop can and should aim to assume within the university.

2.4. Future Virtual Science Shop Visits

A webinar/virtual visit has been confirmed for October 9, 2019 with Dr Emma McKenna from the Belfast Science Shop (at Queen's University Belfast) as a speaker/host. Dr Emma McKenna has many years of experience in running a Science Shop and has been involved in many EU projects.

Suggestions for September's and November's webinar speakers have been collected from the SciShops partners and are currently being discussed; e.g., Dr Bálint Balázs from ESSRG, Hungary, Dr Catherine Bates from TU Dublin and her colleagues in Guelph, Canada, who expressed an interest in hosting a virtual visit. However, further discussion will take place during the SciShops Summer School (July 2019) with all partners in order to identify Science Shops not based at universities, so that NPO- and company-based Science Shops can more directly benefit from the visits also.

2.5. Challenges faced when organising the webinars

To improve the flow of the webinars and make them even more useful we had to overcome some challenges that appeared during organizing these events. First, and most critical was the choice of the hosts. The decision of the names was made after considerations and discussions on having people that are running successful Science Shops. However, as we currently listed mainly university-based Science Shops staff, a challenge that we need to overcome is to include hosts from different types of Science Shops. The second challenge was from a technical point of view and it was about choosing the correct platform. As we aimed for the most interactive session possible we had to ensure that all participants could join with their cameras and microphone on, instead of just being passive attendees that can only comment through chat. We, thus, thoroughly researched and discussed the various webinar platforms available checking for high quality video calls, question and answer session, and high-quality recording. After a thorough search we contacted two of the top-rated webinars companies, GoToWebinar and Zoom, and discussed with them. We decided to choose Zoom as in addition to our criteria above it

offered the most flexible price plan (i.e., lower price, flexibility in the contract and the months of active membership). Zoom is also user-friendly and reliable in both a browser and as an app.

We recommend to prepare some questions and send to the host in advance, giving him/her the opportunity to provide more information to the Science Shops to have at the webinar (e.g. by collecting more files and links that can be useful for the partners).

3 Science Shop physical visits

In addition to Science Shop virtual visits there have been also physical visits to successful Science Shops and to other organisations involved in successful science with and for society projects. Some of the physical visits are also part of the twinning process, enabling new Science Shops to twin with more experienced ones. (The twinning process was detailed in deliverable D6.2)

3.1. 1st and 2nd visit – Barcelona-based Science Shops

During the first SciShops Summer School in July 2018 in Barcelona, the consortium had the chance to visit two Barcelona-based Science Shops:

1. 1st visit - Living Lab for Health

The Living Lab for Health is an expert in RRI and uses participatory methodologies, particularly for agenda setting etc.

2. 2nd visit - UOC Science Shop

The UOC Science Shop is an e-Science Shop at the Universitat Oberta de Catalunya, which is an online university.

Benefits/lessons of the visit

In these visits, the management and staff of both Science Shops relayed to the SciShops partners information about their work process, motivation as well as past and future projects. The partners found the visits and social activities very useful for networking, informal knowledge exchange and getting to know project members better. Moreover, the visits to the Living lab of health and the Universitat Oberta de Catalunya were mentioned as very useful for practical knowledge. More on these visits can be found in the deliverable D3.5: *Events status report 1*.

3.2. 3rd visit - Università Degli Studi di Brescia

The third visit/meeting took place in January 2019 to Brescia, where Prof Rodica Stanescu (Universitatea Politehnica din Bucuresti - InterMEDIU Science Shop) visited Prof Giovanna Grossi (Università Degli Studi di Brescia-new Science Shop on water management “WatShop”). The feedback from these visits from the two Science Shop coordinators can be found below.

Benefits/lessons of the visit

The two partners, Università Degli Studi di Brescia and Universitatea Politehnica din Bucuresti are both technical universities with departments sharing similar interests in environmental engineering. The main aim of the twinning was to transfer expertise of an already established Science Shop to a new one as well as setting collaborations in the field of environment, especially in sustainable water management.

During the second meeting with the WatShop members, Prof. Rodica Stanescu delivered a presentation referring to a topic of interest for both partners: community-based participatory research in environmental engineering. The presentation included a brief description of the Universitatea Politehnica din Bucuresti and of the InterMEDIU Science Shop, as well as a description of the concept

of Science Shop and the main research and knowledge transfer methodologies (CBR, CBPR, CBL) that are developed by this type of organisations, on behalf of citizens and local civil society. A description of the aims of the whole SciShops.eu project was given.

Information was provided on how InterMEDIU was founded in 2002 with financial support received by a Matra project, about InterMEDIU's members and its main aims: cooperation with different community groups in environmental research and education projects and supporting civil society needs for information mainly in environmental protection and chemistry subjects.

The InterMEDIU's community-based research experience was exemplified through some of the main projects completed over time. For example,

- *Exploring the Ground - Fostering Scientific Understanding in Primary Schools* (EFSUPS project - EU FP6 SAS6-CT-2006- 042894) (2006-2008);
- *Public Engagement with Research and Research Engagement with Society* (PERARES project EU FP7 SiS-CT-2010- 244264) (2010 – 2014)
- **JICA** grant for publication of “Toxicological Sheets for Domestic Chemicals” elaborated by InterMEDIU's students (2006);
- **Research project** on assessment of the nitrates pollution of the subsurface water in Cernica village;
- **Research project** on the lability of potentially toxic elements in soils affected by smelting activities in Zlatna area;
- Study on the current treatment technologies of wastewater generated by fracking (Undergraduate theses)

The last four projects from the above list resulted as a need of solving questions received from the civil society. The projects faced various challenges: financial issues, changes in the curricula of academic years, involvement of students and citizens into research activities and so on.

The visit of the InterMEDIU Science Shop representative took place before the start of activities of the Brescia Science Shop. The final structure of the Science Shop website was discussed as well as potential research collaboration. The WatShop launch event was also planned as a co-creation meeting on the cost of water and was held at the centre of the town and managed by the Municipality of Brescia, rather in the university in order to engage more of the civil society. The event took place on February 14th (<https://www.watshop.it/en/magazine/how-much-does-the-water-cost->).

The InterMEDIU and WatShop coordinators discussed the draft business plan of WatShop, making suggestions on how to develop, maintain and manage the WatShop activities in a sustainable manner and how to ensure the co-creation, integration and spread of knowledge in civil society. Professor Giovanna Grossi emphasized the good collaboration with local and regional authorities and the increasing interest of Italian citizens in topics like water management, water treatment costs, etc. Some pictures from the visit are found below.



Figure 8. Prof. Stanescu presenting topics of SciShops project in Università Degli Studi di Brescia (Picture used with permission from Prof Stanescu)



Figure 9. Prof Stanescu exchanging knowledge with Prof Grossi and Ms Francesca Barisani, during her visit to the Università Degli Studi di Brescia (Picture used with permission from Profs Stanescu and Grossi, and Ms Barisani)

3.3. 4th visit - OSHub Portugal

The fourth physical visit took place in February 2019 in the Open Science Hub (OSHub) Portugal, where representatives from four SciShops partners participated in the OSHub workshop. The partners were University Carlos III de Madrid (Prof Elías Sanz Casado), Bay Zoltan Nonprofit Ltd. (Ms Katalin Kurucz), Università Degli Studi di Brescia (Prof Giovanna Grossi and Ms Francesca Barisani), and Universiteit Leiden (Dr Pedro Russo and Ms Liselotte Rambonnet), who organised the workshop. An overview of the visit and outcomes can be found below.

Benefits/lessons of the visit

During the visit, the four partners were shown around by the coordinator of the Open Science Hub-Portugal, Ms Maria Vicente. Partners had the chance to learn more about some of the activities carried out with school children. Then Mr Paulo Langrouva, the mayor of Figueira de Castelo Rodrigo, welcomed the partners and expressed his enthusiasm about the hub that develops closer relationships between municipality and its local community, resolving local challenges, and he emphasised his intention to collaborate with the SciShops project after the successful collaboration they have had with Leiden University.

The project brings science, technology and innovation to places that normally lack access to these areas of knowledge. Focussing on a global challenge that is also locally relevant, an annual theme is selected and activities are organised, with an exhibition around this theme taking place at the hub (currently climate change). The visit was also beneficial as it provided the partners with details on participatory research with schools and organising events where stakeholder and relevant-to-topic researchers are present.

By following an open schooling strategy, OSHub also organize activities outside school, around the topics that are chosen at school. Every month there is a program around one of the topics and a speaker is invited to participate in several activities.

During the visit, the SciShops partners also exchanged ideas about their Science Shop activities and the themes they are working on. For example, the topics of sustainable water resource management and waste management, which the Italian and Hungarian SciShops partners are addressing in various ways, were identified as being of interest to the community and OSHub, and could lead to possible collaborations. Some pictures from the visit are found below.



Figure 10. The Open Science Hub (OSHub)-Portugal. © Photo by Paulo Jorge Lourenço.



Figure 11. Maria Vicente, the coordinator of the Open Science Hub, welcoming the SciShops partners and introducing them to the aims of the Open Science Hub (All rights reserved)



Figure 12. Tour around the Open Science Hub–Portugal by Maria Vicente (All rights reserved)



Figure 13. Surrounding area of the Open Science Hub–Portugal. © Photo by GIX.



Figure 14. Team of the Open Science Hub-Portugal with the visiting SciShops partners and Mr Paulo Langrouva, the mayor of Figueira de Castelo Rodrigo. © Photo by GIX. (All rights reserved)



Figure 15. Ms Maria Vicente explaining the goal of the project and presenting the Open Schooling initiative (All rights reserved)

3.4. 6th visit - Universitatea Politehnica din Bucuresti - InterMEDIU Science Shop

The sixth visit/meetings took place in April 2019 in Bucharest, where Assoc. Prof Giovanna Grossi (Università Degli Studi di Brescia) visited Prof Rodica Stanescu (Universitatea Politehnica din Bucuresti - InterMEDIU Science Shop) as part of the twinning between InterMEDIU and the newly-established WatShop. The feedback of these visits can be found below.

Benefits/lessons of the visit

During this second visit, Prof. Grossi delivered a presentation on flood risk and climate change adaptation strategies. She referred to the Po River basin as an Italian case study and outlined European and the Italian climate change adaptation strategy. The Italian social and cultural context was also considered, in comparison to the Romanian one, to evaluate future potential challenges and how to manage them.

Further discussion between InterMEDIU and WatShop members dealt with activities carried out by the Italian Science Shop. WatShhop activities include an exhibition on water scarcity irrigation techniques presented at Ambiente Parco, an interactive exhibition site in Brescia, open to citizens and students and focusing on environmental issues, which took place on March 22nd, the World Water Day (<https://www.watshop.it/en/magazine/water-irrigation-and-climate-change>). Subsequently, planned activities from each Science Shop were considered (such as potential participation to the [Climathon event](#) [3] in October 2019), including future research collaborations. Some pictures from this visit are found below:



Figure 16. Prof Grossi evaluating future potential challenges with Prof Stanescu during their second meeting in Universitatea Politehnica din Bucuresti (Picture used with permission from Profs Grossi and Stanescu)



Figure 17. The meeting of Prof Grossi with IntreMEDIU's members (staff and students) in Universitatea Politehnica din Bucuresti (Picture used with permission from Profs Grossi and Stanescu)

3.5. 7th visit - University of Oxford

The seventh visit/meeting took place in April 2019 in Oxford, where Dr Vasiliki Bitsouni (SciCo Cyprus) visited Dr Michaela Livingstone-Banks (University of Oxford Science Shop), to discuss further about organising webinars and to learn more about strategies for dissemination and communication of research in Oxford University who have a very successful track record of engaging with the society. (Dr Livingstone-Banks is the Public Engagement Facilitator in the Mathematical, Physical and Life Sciences Division of the University of Oxford. She is the Divisional lead for Public Engagement with Research (PER), and is responsible for developing, implementing and monitoring the Division's Strategic Plan for Public Engagement with Research.) SciCo Cyprus is supporting the KPMG Science Shop in its activities. They are also co-organising the 2nd Summer School with other partners within WP3 and participating in the dissemination of the SciShops project within WP7.

Benefits/lessons of the visit

A tour of the Oxford University Science Shop was given by Dr Livingstone-Banks. The theme of the Oxford Science Shop is artificial intelligence (AI). Oxford has followed a very successful strategy over the past years in disseminating AI activities going on in the university. A very insightful discussion and exchange of knowledge between Dr Bitsouni and Dr Livingstone-Banks followed, with Dr Livingstone-Banks providing information and mentioning several examples of the projects, activities and strategies that the University of Oxford uses. Such examples are the following:

- [Oxford Sparks](https://www.oxfordsparks.ox.ac.uk/) (https://www.oxfordsparks.ox.ac.uk/) which is a portal for engaging with a wealth of exciting science taking place across Oxford University
- Employing a variety of social media channels and interactive modalities such as Facebook lives, where the audience can ask questions
- Targeting underrepresented groups, e.g. old people, women and ethnic minorities etc
- Participating in Science Festivals and other science events, for example the [@Curiosity Carnival](#), Oxford's biggest public engagement event (part of the European Researchers' Night)

- Producing posters, frequent newsletters & writing in the local newspaper
- Collaborating with local organisations (in Oxford), e.g., Blackbird Leys, BMW etc.

The visit was very insightful and helpful for moving forward with organising a successful series of webinars, exchanging ideas on identifying and collecting scientific questions from communities and learning about effective communication and dissemination strategies.

3.6. Future physical visits

Three more visits have been organised during the second SciShops Summer School which will take place 1-4 July 2019 in Cyprus. The visits are briefly described below. (A detailed report on them will be included in deliverable D3.8.)

1. 1st visit: [Terra Cypria \(01.07.2019\)](#)

Terra Cypria, the Cyprus Conservation Foundation, is located in the old town of Limassol and it is a non-governmental organisation whose overall aim is to promote environmental awareness and sustainability. It runs a number of educational programmes that promote conservation, environmental protection and research. The consortium will have the opportunity to learn more about a number of their projects that engage citizens in research activities.

2. 2nd visit: [The Cyprus Institute \(Cyl\) \(03.07.2019\)](#)

Cyl is a research and educational organisation, which supports the knowledge economy on the island. Moreover, Cyl is a science, technology and innovation hub for the Eastern Mediterranean, and a gateway between Europe and the Middle East. It has cutting-edge research infrastructure geared towards regional research challenges, based on the principles of open access, and recognised at European level. Cyl excels in the following research fields: Solar Thermal Energy/Energy Storage, Climate and Environmental Research, Technologies for Archaeology/Cultural Heritage, and High-Performance Computing, simulation and hyper-infrastructures. During the visit the consortium will be exposed to a range of participatory and citizen science projects, ranging from Virtual Environments, to Medical Imaging and Environmental management and monitoring and visit some of Cyl's research infrastructure.

3. 3rd visit: [FOSS Research Centre for Sustainable Energy \(University of Cyprus\) \(03.07.2019\)](#)

The FOSS centre plays a key role in research and technological development activities in sustainable energy both in Cyprus and internationally. FOSS has been running successfully several EU projects on Photovoltaics (PV) grid integration, smart grids and smart cities, energy efficiency etc., in collaboration with multiple stakeholders. It has also developed numerous energy related courses and vocational trainings. During the visit partners will get the opportunity to learn about the latest technologies related to PVs, as well as see the battery storage systems currently operating at the FOSS, the state-of-the-art facilities they have related to indoor and outdoor PV testing and performance assessment, and the virtual labs of sustainable energy they have developed.

4 References

- [1] Martin, E. and McKenna, E. (2012) Sustainability for Science Shops: A practical guide to developing policy and strategy. Queen's University Science Shop (D7.1).
- [2] Brodersen, S. G. K., & Jørgensen, M. S. (2012). *The Roles of Science Shops in Enabling Civil Society Organisations' Societal Influence*. In PAPER FOR THE GRASS INNOVATION WORKSHOP AT UNIVERSITY OF SUSSEX.
- [3] Climathon: <https://climathon.climate-kic.org/en/>

5 Appendix

The presentation files of the first two webinars can be found below. Both hosts/speakers gave permission to SciShops.eu to share their presentations.

5.1. The presentation file used by Ms Jozefien De Marrée in the first webinar

Science Shop Brussels

Jozefien De Marrée
Vrije Universiteit Brussel
24th of May 2019



CBR/Science Shop

“Independent, participatory research support in response to concerns experienced by civil society.”

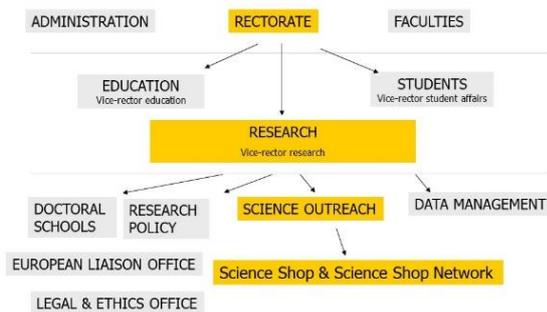


Demand/need-driven = key factor

History of Brussels Science Shop

- Established in 2002, inspired by Dutch Science Shops
- Study of needs 2003 E. Donders “Do Brussels CSOs need a Science Shop?” (100/140 “YES”)
- Initiated by Universities of Antwerp & Brussels: successful pilots
- Embedded within VUB Research Dept. - science outreach office
- Funded by government from 2002 – 2007
- Co-funded by Flemish government, project funding & VUB since 2008
- Coordinating Science Shop network with Flemish Universities

Science Shop position in VUB



European Science Shop projects involvement

→ ENTRANCE project

As partner

FP6: TRAMS - Training and Mentoring of Science Shops (2005-2008)
FP7: PERARES - Public Engagement with research and Research Engagement with Society (2010-2014)

As coordinator

H2020: EnRRICH - Enhancing Responsible Research and Innovation through Curricula in Higher Education (2015-2018)
E+: ENTRANCE - ENgaged ReseArch coNnecting Community with higher Education (2018-2020)



Timing: Jan 2018 – June 2020
 Partners:



Project Outputs:
 1) Impact evaluation
 2) needs study
 3) community based learning training materials for lecturers
 4) case studies
 5) handbook

www.entrance-project.eu
 @ENTRANCE_EU



Way of work



Way of work

Main goal = gathering useful and reliable data for CSO

→ What is expected of CSO?

- Deliver content input to frame research question
- Presence during start & interim meeting
- Available contact for student
- Report problems to Science Shop
- Further dissemination/use of results in case of successful study
- Compensate travel costs and print costs of student



Way of work

Criteria

1. Should be researchable, contains scientific element
2. Should be relevant for several CSOs/people
3. CSO should be able to use results
4. Should be non-profit, non-commercial
5. Question should be more or less 'timeless'



Way of work

In case student passed - project is successful:

- CSO receives hard copy
- published on Science Shop website
- Results? Pursuit?
 - actions
 - press release
 - Event, round table, exhibition...
 - follow-up studies (PhD, new research topics)
 - ...



Facts & Figures

Successful projects 2017-2018: 14 BA/MA theses, 8 group projects in one course

Ongoing projects '18-'19: 25 MA/BA theses, 15 group projects in 3 courses

Available research questions in database: 180

Registered CSOs: 520

Total successful projects since 2006: 256

Disciplines: educational sciences, psychology, gender studies, journalism, communication sciences, health care policy & management, sociology, history, business management...

example 1: Homeless women in city night shelter



example 2: Film heritage of Brussels war history



Science Shop evaluation 2003-2018



- 81 CSOs involved in successful projects from '03-'17
→ 41 completed survey (51%)
→ 9 of them were also interviewed
- 101 students involved in successful projects from '10-'18
→ 36 completed survey (36%)
- 51 supervisors involved in successful projects from '03-'17
→ 28 completed survey (55%)

Science Shop evaluation 2003-2018 → examples of actions

- 1) RECRUIT MORE STUDENTS & LECTURERS
→ Integrate projects in courses, support lecturers in collaborating with CSOs
→ Stipulate gains for students, ideally through course reflection component
→ How to increase added value for supervisors/lecturers?
- 2) INCREASE VISIBILITY
→ Renew database, website, newsletter
→ Host annual Science Shop awards during graduation ceremony
- 3) INCREASE PROJECT QUALITY
→ Plan interim meeting with students & CSOs during start meeting
→ Students should have at least one site visit during project

New Science Shop database & website



= VUB community based or service learning community of (25) VUB lecturers

- 1) 4 informal learning & exchange moments with community
→ How to design a CSL course?
→ How to prepare a CSL course?
→ How to follow-up a CSL course?
→ How to evaluate/conclude a CSL course?
- 2) online platform with literature, course materials, tools, reflections
- 3) Science Shop support in setting up & sustaining CSO partnerships



Questions? Comments?

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VUB-campus Etterbeek – R&D
Pleinlaan 2, 1050 Elsene
+32 2 629 18 34
Jozefien.de.marree@vub.be
www.vub.be/onderzoek/wetenschapswinkel
www.wetenschapswinkel.be

5.2. The presentation file used by Dr Michael Søgaard Jørgensen in the second webinar

Empowerment of civil society through Science Shops

Michael Søgaard Jørgensen
 Section for Sustainable Design and Transition
 Department of Planning
 Aalborg University Copenhagen
msjo@plan.aau.dk

SciShops Webinar 5 June 2019

Overview

- What is empowerment – empowerment through science shops
- Demand and supply oriented science shops
- Knowledge needs in and impacts from science shops
- Development of new research and education areas as part of science shops
- A non-formalised science shop at Aalborg University
- How to prepare a new science shop?

2

What is empowerment?

- Paulo Freire (1974) defines empowerment as the ability to “understand social, political and economic contradictions and ability to act against the oppressing elements of reality”.
- a critical paradigm linked to social mobilization, collective action, and social transformation, which strengthens civil society and civil society organisations.
- Focus grown as a strategy to address and counter growing individualization, neoliberalism, and market orientation of public institutions and services.

3

Empowerment of civil society through research cooperation in a science shop (1)

- Civil society can be **directly** empowered through cooperation which develops
 - documentation of problems civil society experiences but have not been able to get government and business to address,
 - knowledge about emerging concepts, strategies etc. and their possible societal impacts
 - alternative strategies and systems addressing civil society needs

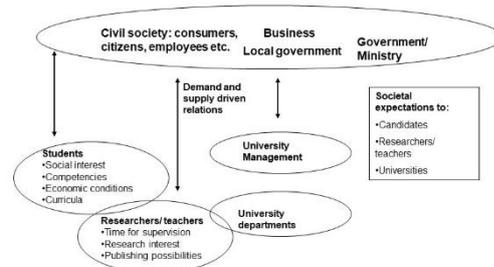
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Empowerment of civil society through research cooperation in a science shop (2)

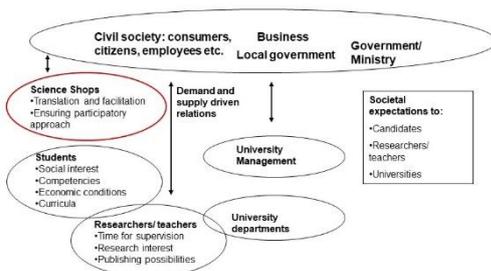
- Civil society can be **indirectly** empowered, if universities develop
- New research and education areas based on concerns and ideas expressed by civil society through research cooperation.

5

Direct research cooperation between civil society and higher education institutions



Science shop: a formalised space at university for cooperation with civil society



Model for analysis of Science Shop projects with CSO's

The social context of the problem:	<ul style="list-style-type: none"> • The knowledge need of the CSO • The strategy of the CSO in approaching the Science Shop • The aim of the project co-operation
The co-operation process:	<ul style="list-style-type: none"> • The shaping of the project co-operation (aim, methodology etc.) • The knowledge production (interaction among the involved actors)
The results, outcome and impact of the project:	<ul style="list-style-type: none"> • The strategy of the CSO and the other project partners for application of the results to fulfil the aim

8

Overall types of civil society needs in requests to Science Shops

- Documentation of problems already perceived by CSOs – in order to obtain acceptance from other stakeholders, like government and businesses (e.g. different types of pollution)
- Development of new knowledge about a concern CSOs have (a new technology area and its possible paths and impacts)
- Development of design proposals supporting implementation of a preventive CSO strategy (urban ecology, organic food)

Impact: Students develop game computer programme and it is made available at web site

- Need for better tools for children with speaking difficulties - experienced by pedagogic staff
- Want to give the children possibilities to train themselves
- Kinder gardens visited as part of the development



Impact: NGOs bring forward the scientific research and its results in order to raise interest and support around a topic

- **Polluted pond**
- Initiated by a local branch of the Danish Society for Nature Conservation
- Municipal government did not recognise problem
- The Science Shop documented the problem and came up with solutions
- The municipality chose not to rehabilitate the pond despite scientific evidence of pollution level
- NGO did not involve the local press
- The environment in the pond were not prioritised
- *Would a more dialogue-based approach with the municipal government about the problem have given influence on the policy priorities?*



The knowledge production in community-based research – shaped by the participants and the context

- Interactive knowledge production between students/researchers, the Science Shop and the CSO
 - the speaking difficulty and the urban planning project
- Knowledge supply, where researchers or students produce new knowledge, which is transferred to the CSO
 - the health and traffic project and the polluted pond project (focus on the independency of the research)

Empowerment of CSOs: Enhancing their capacity for influencing society

- CSOs provided with knowledge ...and are (maybe) able to implement results in their activities or services
- CSOs bring forward the scientific research and its results in order to raise interest and support around a topic.
 - Although a scientific report might not be enough to convince other stakeholders
- CSOs learn to apply scientific methods or theories (e.g. sampling, focus group interviews, etc.)

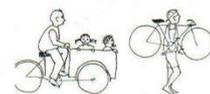
Impact: Students help local community council visualise their ideas about new public facilities as part of urban renewal on empty spaces. Led to new culture house. The Copenhagen city administration started taking the local council serious. => part of city experiment with local planning



Impact: NGOs learn to apply scientific methods or theories used by the researchers or the students (focus group interviews)

Obstacles to city bicycling - Initiated by the Danish Cyclist Federation (DCF)

- Intention: a project documenting bicyclists' environmental awareness and fear of cars and busses
- Science Shop project highlighted new barriers experienced by the bicyclists: Fear of other bicyclists important
- DCF used existing networks and occasions to apply the new insight
 - Project together with a municipality about cycling conditions included a focus on bicyclist behaviour
- DCF able to use focus group interviews as a methodology in other situations inspired by the methodology in Science Shop project



Strategies for research development from Science Shops

- Science shops as antenna about new problems and needs
 - Medicine and pregnancy (Groningen, The Netherlands)
- Science shop as incubator for new research area
 - Organic food as new research area at DTU, Denmark
- Research departments take up participatory research methods through interaction with science shop
 - Medicine Science Shop, Groningen, NL

Science Shop as incubator: *The embedding of organic food production as research area at DTU*

Period	Development in societal discourse related to organic food production	The activities of the Science Shop and the affiliated community research centre	The interest of the 'established' researchers at the university
1985-1990	•Organic agriculture starts growing on the initiative of city people moving into the countryside	•The Science Shop receives questions from agriculture organisations •Projects done as student projects	•Food and environmental researchers as supervisors on Science Shop projects
1990-1998	•Organic agriculture increases due to problems with pesticides in ground water •Conventional farmers converts to organic farming in bigger numbers	•Apply for funding from national organic food research programme ⇒ Science Shop develops own research group	•Science Shop invited to give lectures at food technology course •Food researchers not interested in participating in research project on organic food processing
1998-	•Processed organic food products increase	•Apply for funds from national food research programme •Suggests consumer organisation to plan research project on consumer policy	•Food researchers agree to co-operate with organic food research group on project on care in organic food processing

Science shop as facilitator of new research area: *The embedding of re-use of rain water at DTU*

Period	Development in societal discourse related to green water management	The activities of the Science Shop and the affiliated community research centre	The interest of the 'established' researchers at the university
1985-1990	•Focus on low-tech wastewater treatment •Focus on reuse of rainwater	•The Science Shop receives questions •Projects done by students	•Teachers find Science Shop projects time saving and interesting
1990-	•Debate on the reuse of rainwater •Stakeholders participate in seminars •EPA starts projects on reuse of rainwater and local wastewater management	•Science Shop decides to try to embed activities on 'green water management' •Proposes two departments to organise seminars in co-operation with the Science Shop	•Teacher integrate topics in courses •Teacher proposes new project themes – from a more critical angle •Departments get national research funding

Aalborg University Copenhagen



Our present model at Aalborg University Copenhagen

- Education based on Problem-based Learning => projects part of every semester
- Supply-oriented science shop model: research and education
 - No formalised "entrance" for civil society to the department
- Formalised relations with poorer part of neighbourhood
 - Access through public funded integrated urban renewal programme
- Action research within elder care with employees, elderly and relatives
- Developing "energy community" as part of "smart energy system"
- Climate adaptation as nexus and value-adding innovation

An application for a Science Shop to a university could address these topics:

- Why a Science Shop at the university: potential benefits for the university and in the society.
- Potential user groups and their need for knowledge.
- Experiences from other Science Shops.
- Activities in the Science Shop.
- Affiliation of the Science Shop to the university: Organisation and management.
- Personnel in the Science Shop.
- How can a Science shop and students' project work fit into the curricula of the university?
- How can the scientific personnel be involved in the Science Shop work: As supervisors? By working themselves with requests?
- Budget and financing: University funds? National funds?

The need and the possibilities for these different activities should be considered during the planning of a Science Shop:

- Short term advice: Answering by the Science Shop, using the scientific personnel at the university, referring to external sources.
- Student project work.
- Advisory groups for meeting with user groups on ongoing projects.
- Research projects.
- Developing new areas for education and research: Empirical fields, theories and methods for co-operation with user groups.